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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,193	01/25/2002	William R. Wheeler	10559-604001/P12888	5324

20985 7590 09/22/2005

FISH & RICHARDSON, PC
12390 EL CAMINO REAL
SAN DIEGO, CA 92130-2081

EXAMINER

OSBORNE, LUKE R

ART UNIT PAPER NUMBER

2123

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/057,193	Applicant(s) WHEELER ET AL.	
	Examiner Luke Osborne	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/8/02, 6/11/03, 3/15/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Status

1. Claims 1-32 are pending in the instant application.
Claims 1-32 stand rejected.

Information Disclosure Statement

2. The information disclosure statement (IDS) submissions on 3/08/2002, 6/11/2003 and 3/15/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 provides for the use of a state variable, but, since the claim does not set forth any steps involved in the method/process other than specifying that it takes a single action, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

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Any claim not directly rejected on 35 U.S.C 112, 2nd stands rejected due to its dependency.

The art rejections of the claim(s) listed above are applied as best understood in light of the rejection under 112, 2nd paragraph discussed above.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-10, 21-32 are rejected under 35 U.S.C. 101.
5. Claim 5 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).
6. Claims 1-10 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For a claimed invention to be statutory, the claimed invention must be within the technological art. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological art fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as

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opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a method claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

As to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble. In *Bowman* (Ex parte *Bowman*, 61 USPQ2d 1665, 1671 (BD. Pat. App. & Inter. 2001) (Unpublished), the board affirmed the rejection under U.S.C. 101 as being directed to non-statutory subject matter. Although *Bowman* discloses transforming physical media into a chart and physically plotting a point on said chart, the Board held that the claimed invention is nothing more than an abstract idea, which is not tied to any technological art or environment.

In the present case, although claim 1 recites at the preamble a method of generating circuit simulation code using a computer language, the steps in the claim body of declaring a width of a variable, and assigning one variable to another, can be implemented by the mind of a person or by the use of a pencil and paper. In other words, since the claimed invention, as a whole, is not within the technological arts as explained above, these claims only constitute an idea and does not apply, involve, use, or advance the technological arts, thus, it is deemed to be directed to non-statutory subject matter.

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7. Claims 1-10 are rejected for lacking a useful, concrete and tangible result. MPEP § 2106 IV B, 2, b states that.

To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan (discussed in i) below), or (B) be limited to a practical application within the technological arts (discussed in ii) below). See *Diamond v. Diehr*, 450 U.S. at 183-84, 209 USPQ at 6 (quoting *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1877))

The claim recites steps of declaring a variable of a particular size and assigning the variable a value. The method as recited in claim 1 provides no transformation outside a computer.

MPEP § 2106 IV B, 2, b states

On the other hand, it is necessary for the claimed invention taken as a whole to produce a practical application if there is only a transformation of signals or data inside a computer or if a process merely manipulates concepts or converts one set of numbers into another.

No such practical application is asserted by the claim.

8. Claims 21-30 are rejected for lacking a useful, concrete and tangible result.

Merely claiming nonfunctional descriptive material stored in a computer-readable medium does not make the invention eligible for patenting. For example, a claim directed to a word processing file stored on a disk may satisfy the utility requirement of 35 U.S.C. 101 since the information stored may have some "real world" value. However, the mere fact that the claim may satisfy the utility requirement of 35 U.S.C. 101 does not mean that a useful result is achieved under the practical application requirement. The claimed invention as a whole must produce a "useful, concrete and tangible" result to

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have a practical application. For these reasons and the reasons for claims 1-10 regarding similar subject matter discussed *supra* Claims 21-30 are non-statutory.

9. Claims 31-32 are rejected for being software per-se. MPEP §2106 IV, B, 1, states that.

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory.

Thus the recited limitation in claim 34 of a computer instruction establishes the claim as non-statutory.

Any claim not directly rejected on 35 U.S.C 101 stands rejected due to its dependency.

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C 101(nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-32 are rejected under 35 U.S.C. 102(b) as being anticipated by the BigInteger.java class created 98/07/01, version 1.8, Sun Microsystems Inc by Josh Bloch hereafter "Bloch".

Regarding claim 1 Bloch discloses "a method of generating circuit simulation code using a computer language, comprising:

declaring a width of a state variable equal to a width of a vector state
[BigInteger state1 = simulation_vector_state1],

the vector state having a width greater than a system platform width
["infinite" size constraint]; and

extracting data from the vector state and placing the data in the state variable [assignment operator]" as claimed.

Regarding claim 2, Bloch discloses the method of claim 1, "further comprising generating the vector state [declaring a BigInteger] using a simulator console [The input/output device (simulator console) is an inherent limitation of programming]" as claimed.

Regarding claim 3, Bloch discloses the method of claim 2, "wherein generating the vector state comprises specifying the width of the vector state [This is an inherent limitation of the declaration process, when the variable is declared its size is specified]" as claimed.

Regarding claim 4, Bloch discloses the method of claim 1, "further comprising displaying all n ($n \geq 1$) bits of the vector state, the width being n bits wide [System.out.println(BigInteger)]" as claimed.

Regarding claim 5, Bloch discloses the method of claim 1, "further comprising using the state variable in a single action [BigInteger state1 = BigInteger state1 + 1]" as claimed.

Regarding claim 6, Bloch discloses the method of claim 5, "wherein using the state variable in a single action comprises comparing the state variable to a second state variable [BigInteger state1 \geq BigInteger state2]" as claimed.

Regarding claim 7, Bloch discloses the method of claim 1, "further comprising generating a simulation script that includes the state variable, the simulation script for driving a simulation [BigInteger state1 = simulation_vector_state1]" as claimed.

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Regarding claim 8, Bloch discloses the method of claim 1, "further comprising treating the vector state as a native simulator object, the native simulator object having a maximum state size allowable by a simulator in a single action [BigInteger state1 \geq BigInteger state2]" as claimed.

Regarding claim 9, Bloch discloses the method of claim 1, "wherein the data comprises n ($n \geq 1$) bits of a simulator state [BigInteger state1 = simulation_vector_state1]" as claimed.

Regarding claim 10, Bloch discloses the method of claim 1, "wherein extracting data from the vector state comprises extracting all n ($n \geq 1$) bits of the vector state, the width being n bits wide [BigInteger state1 = simulation_vector_state1]" as claimed.

Regarding claim 31 Bloch discloses "a computer instruction that generates a vector state, the vector state having a width larger than a predefined state width [BigInteger state1]" as claimed.

Regarding claim 32, Bloch discloses the method of claim 31, "wherein the vector state is generated using a simulator console [The input/output device (simulator console) is an inherent limitation of programming]" as claimed.

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Regarding claim 33, Bloch discloses the method of claim 31, "wherein the vector state is used to generate state variables [BigInteger state1 = simulation_vector_state1]" as claimed.

Claims 11- 20 contain the apparatus claims for the method of claims 1-10, thus are rejected for the same reasons as claims 1-10.

Claims 21-30 contain the computer program product claims for the method of claims 1-10, thus are rejected for the same reasons as claims 1-10.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO form 892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke Osborne whose telephone number is (571) 272-4027. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LRO


Paul L. Rodriguez 9/19/05
Primary Examiner
Art Unit 2125